



## PATENT ABSTRACTS OF JAPAN

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(54) **PRODUCTION OF HIGH STRENGTH STEEL  
 TUBE EXCELLENT IN SULFIDE STRESS  
 CORROSION CRACKING RESISTANCE**

## (57) Abstract:

**PURPOSE:** To obtain the steel tube by directly working a continuously cast billet into a seamless steel tube, combinedly applying direct hardening to the steel tube, and specifying the composition of the steel tube.

**CONSTITUTION:** A billet having a composition which consists of, by weight, 0.15-0.4% C, 0.1-1% Si, 0.3-1% Mn, 0.1-1.5% Cr, 0.1-1% Mo,  $\leq 0.015\%$  P,  $\leq 0.005\%$  S, 0.0005-0.003% B, 0.01-0.1% Al, 0.01-0.03% Ti, 0.003-0.01% N, and the balance Fe and where, when a PGS value represented by equation  $PGS = (0.3Ti + 0.05Al)/N$  is determined, the contents of Al, Ti, and N are regulated so that PGS becomes 1.0 to 1.5 is prepared. This billet is worked at a temp. not lower than the  $Ac_3$  transformation point into a seamless steel tube, which is subjected, without delay, to water quenching and to

tempering at a temp. not higher than the  $Ac_1$  transformation point. Moreover, Nb and/or V can further be incorporated by 0.01-0.05% into the above composition. By this method, the seamless steel tube for oil well and gas well use, excellent in SSCC resistance and having strength as high as  $\geq 75\text{kg/mm}^2$  yield point strength can be obtained.

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